REMARKS

The present amendment and request for continued examination (RCE) are respectfully submitted in response to the final Office Action of September 13, 2006. Entry of new claims 21 through 26 submitted herewith is respectfully requested.

Claims 1, 2, 3 and 6 through 20 were before the Examiner for consideration. In the final Office Action, all except claims 9, 11 and 18 were rejected on the basis of the prior art. The Applicant has noted with appreciation that claim 18 was indicated to be allowed, while claims 9 and 11 were indicated to be allowable if rewritten in independent form including all of the limitations in their base claim and any intervening claim.

In the preceding amendment, both claims 9 and 11 have been rewritten in independent form including all of the limitations of claim 3 from which they depend. In addition, claims 7, 8 and 16, originally dependent from claim 3, have been amended to depend from claim 9, and new claims 27, 28 and 29, analogous to claims 7, 8 and 16 but dependent from claim 11, have been submitted above. Finally, claim 17, originally dependent from claim 1, has been amended to depend from claim 9, and new claim 30, analogous to claim 17 but dependent from claim 11, has been submitted above.

It will be noted that claims 1, 2, 3, 6, 12, 13, 14, 15, 19 and 20, that is, a total of ten (10) claims of which six (6) are independent, have been canceled in the preceding amendment. Prior to any entry of the present amendment, the application included a total of eighteen (18) claims of which seven (7) were independent. Upon entry of the amendment, the application will include a total of eighteen (18) claims of which five (5) will be independent. It is accordingly believed that no claim fees are due at the present time.

The objective of the present invention to provide a system that assists dentists for obtaining informed consent in dental care that is simple and stress-free both to the dentist and patient. Conventionally, in order to explain the condition of the problem area which his or her patient cannot directly view, a dentist utilizes two mirrors, a dental and a hand mirror, to point out the image of the problem area. For the dentist's dental mirror to accurately display the status outside the mouth cavity on the hand mirror held by the patient, this operation requires using two mirrors, and holding the dental mirror at a position away from the field that can be recognized by the dentist's dental mirror. While this operation requires considerable skill, the dentist has no way of knowing whether, in effect, the patient accurately recognizes the target projected by the hand mirror.

To overcome these problems, many methods have been devised for conveying the image to a monitor outside the mouth with a CCD camera and the like. Nevertheless, the CCD camera is operated in such a manner that the dentist shifts his or her view from the patient's mouth cavity to check the image on the monitor, whereby this action itself ends up requiring substantial expertise. The present invention excels in that it allows the dentist to accurately display the image on the monitor without shifting his or her line of view from the patient's mouth cavity, an action close to what a dentist does in day-to-day clinical operations, and that it establishes a speedy examination and treatment system in which a dentist can immediately start treatment while he or she explains the problems. In addition, the patient, lying in a horizontal position for the examination and treatment, can check the directly unviewable problem area in the mouth cavity, without shifting the head and line of vision, in a natural manner like viewing one's face in a hand mirror in everyday life. For instance, the patient, for laying down watching TV, tends to hold the head upright on the elbows or the like, thereby adjusting the position of the

image to the head to appreciate the screen comfortably. This observation also indicates that when the patient lying down in a horizontal position for examination and treatment tries to view a monitor provided on the floor, the patient reflectively shifts his or her line of view, an action where if the patient consciously fixed the head position; this would cause the rate of recognizing data to decrease.

In view of these facts, the present invention has a pinhole CCD camera secured on the back of the dental mirror in such a manner that the center or any other portion of the dental mirror surface from which a reflective material is removed for transmitting light coincides with an incident portion of the CCD camera; wherein a hand mirror shaped monitor displays the image data received via cable or radio from the pinhole CCD camera. In this way, even though the patient is in a horizontal position (lying on a chair for dental care) for the examination and treatment of the directly unviewable problem area in the mouth cavity, the dentist can provide the patient with the field of view which is very close to the image of the target area the dentist views using the above-mentioned dental mirror without shifting the line of vision from the mouth cavity. Moreover, since the patient can hold the compact hand mirror shaped monitor at positions that allow the patient alone to view the problem area easily, the patient can see the image while lying down horizontally on a dentist's chair.

Further, capturing an image by the CCD camera requires an illumination source for increasing light intensity of the target area. In the present invention, the dentist can use the surface of the dental mirror to reflect lighting from the surgical lighting system attached on a dental chair, thereby illuminating the target area.

In addition, the dentist can use the dental mirror portion as a light source by reflecting lighting from the conventional surgical lighting system attached on a dental chair to

illuminate the target area. This system, in which a CCD camera attached to the dental mirror is directly inserted to the aforementioned mouth cavity, can be converted to an intraoral camera system with an optical fiber having its one end being provided in such a manner that an incident portion thereof is at a portion on back of the dental mirror from which a reflection material is removed and the other end of the optical fiber being provided with a CCD camera for inputting the field view at the incidence portion of said dental mirror.

In this system, the CCD camera is located in front of the hand mirror shaped monitor and usually, an image is provided thereon via an optical fiber. When the optical fiber is removed, the CCD camera directly displays the frontal view thereof, just like the way a generic hand mirror does. To obtain a light source for this system, a dentist may use a dental mirror to reflect light from the surgical lighting system attached to the dental chair. Alternatively, the dentist may use a halogen lamp light source to illuminate the field of view through the taper fiber portion of the optical fiber.

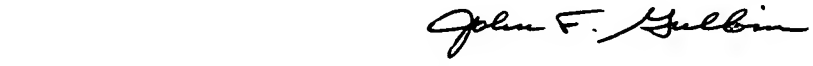
Nevertheless, the camera lens surface of the intraoral camera system described above often collects moisture due to the patient's breathing or cooling water supplied to a polishing tool. To resolve this problem, an airway pipe with a jet nozzle pointing toward the pinhole CCD camera and optical fiber's incident portion is provided coaxially with the dental mirror holder to eject air utilizing a compressor into the surface of the dental mirror, pinhole CCD camera, and optical fiber's incident portion to blow away moisture, saliva, cooling water and the like, thereby enhancing the field of view.

When the patient is uncomfortable with dryness due to air ejected into his or her mouth, the opposite end of the jet nozzle may be provided with a suction port connected to a

vacuum device to suck out the ejected air. The patient's mouth can thus be protected from drying; this is an excellent effect.

As described above, the present invention has characteristic constitutions that cannot be found in the references cited by the Examiner, and these characteristic constitutions provide significant effects. In view of this argument, the Examiner is respectfully requested to give claims 21 through 26 positive consideration.

Respectfully submitted,



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